P-388

Synthesis of two new Sn(IV) complexes of *S*-ethyl-3-(2-hydroxy-phenyl)methylenedithiocarbazate

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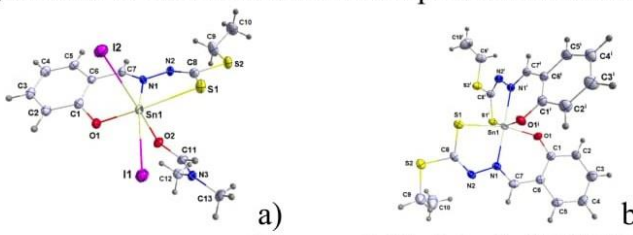
ABSTRACT

The NNO-, ONO- and especially ONS-tridentate Schiff bases are of considerable interest, most because of their pharmacological applications and ability to form interesting chelates with heavy metals. Two new Sn(IV) complexes, $[SnI_2(sedtc)\ DMF]$ (**1**) and $[Sn(sedtc)_2]$ (**2** [sedtc: *S*-ethyl-3-(2-hydroxyphenyl)methylenedithiocarbazate)], are synthesized and characterized using single crystal X-ray diffraction analysis, mass spectrometry and spectroscopic techniques such as IR, ^{1}H- and ^{13}C-NMR. Compounds **1** and **2** (Figure) crystallize in the orthorhombic system with *Pbca* space group and the monoclinic system with *C2/c* space group respectively. Single crystal X-ray analysis reveal that complex **1** has distorted octahedral structure with the Schiff base ligand coordinated to the tin atom as tridentate chelating agent accompanied with an iodido ligand in equatorial positions and the axial sites are occupied with another iodido ligand and DMF solvent molecule. Likewise, complex **2** selects distorted octahedral geometry with the two Schiff bases bonded to the central metal ion as meridionally coordinated anionic ONS tridentate chelates. In spectral studies of the compounds, disappearance of –HN– signal in ^{1}H-NMR confirms coordination of the sedtc ligand *via* azomethine nitrogen atom to the tin metal in its deprotonated form as well as IR.



a) b)

Figure. a) $[SnI_2(sedtc)DMF]$ b) $[Sn(sedtc)_2]$

Keywords: dithiocarbazate, tin(IV) complexes, crystal structure

REFERENCES

[1] *Takjoo, R., and Centore, R., J. Mol. Struct., 1031, 180–185,* ***2013****.*

[2] *Ali, M. A., Mirza, A. H., Hamid, M. H. S. A. Bujang, F. H., and Bernhardt, P. V., Polyhedron, 23, 2405–2412,* ***2004****.*

[3] *Sousa, G. F., Gatto, C. C., and Ardisson, J. E. J., J. Chem. Crystallogr., 41, 838–842,* ***2011****.*